

## Glucose/O<sub>2</sub> biofuel cell with enhanced performance by enzyme modified SWNT-Ppy composite electrode

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Glucose/O<sub>2</sub> biofuel cell was prepared by enzyme modified 3-dimensional SWNT-Ppy composite electrode to solve the two critical problems for practical use of enzymatic biofuel cell; poor power density and short life time. Glucose oxidase and laccase were selected as anodic and cathodic catalyst, respectively. The polarization curve of bioanode and biocathode were obtained in which 880 unit glucose oxidase and 68 unit of laccase were immobilized, respectively. The power density of this biofuel cell was 41  $\mu\text{W}/\text{cm}^3$  and half-life of this biofuel cell at working state with continuous feeding of 100mM glucose as fuel was 28 hours.